

UNIVERSITY OF CALIFORNIA  
COLLEGE OF AGRICULTURE  
BERKELEY, CALIFORNIA

AGRICULTURAL EXPERIMENT STATION  
E. J. WICKSON, DIRECTOR

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ANNOUNCEMENT OF FARMERS' SHORT COURSES  
FOR 1912

AT THE

UNIVERSITY FARM, DAVIS, CALIFORNIA



UNIVERSITY OF CALIFORNIA PRESS  
BERKELEY

BENJAMIN IDE WHEELER, Ph.D., LL.D., President of the University.  
EDWARD JAMES WICKSON, M.A., Dean, College of Agriculture.

#### INSTRUCTING STAFF AND SUBJECTS.

E. J. WICKSON, M.A., Horticulture, Grasses and Forage Crops.  
LEROY ANDERSON, M.S.A., Ph.D., Dairy Industry, in charge of Short Courses.  
M. E. JAFFA, M.S., Poultry Husbandry, Nutrition.  
C. W. WOODWORTH, M.S., Entomology.  
R. E. SMITH, M.S., Plant Pathology.  
F. R. MARSHALL, B.S.A., Animal Industry.  
G. W. SHAW, M.A., Ph.D., Agronomy.  
F. T. BIOLETTI, M.S., Viticulture.  
W. T. CLARKE, B.S., Horticulture.  
B. A. ETCHEVERRY, B.S., Irrigation.  
J. E. COIT, Ph.D., Horticulture.  
J. S. BURD, B.S., Fertilizers.  
H. J. QUAYLE, M.S., Entomology.  
C. M. HARING, D.V.M., Veterinary Science.  
W. B. HERMS, M.A., Entomology.  
C. B. LIPMAN, Ph.D., Soils.  
A. M. CLEGHORN, B.A., Principal University Farm School.  
R. M. ROBERTS, B.S.A., Farm Manager.  
L. M. DAVIS, B.S., Dairy Industry.  
E. H. HAGEMANN, Dairy Industry.  
J. I. THOMPSON, B.S., Animal Industry.  
J. S. THOMPSON, B.S., Animal Industry.  
S. H. BECKETT, B.S., Irrigation.  
F. M. HAYS, D.V.S., Veterinary Science.  
F. FLOSSFEDER, Viticulture.  
JAMES KOEBER, B.S. Farm Machinery.  
HARRIET HOWELL, Home Economics.  
R. H. TAYLOR, B.S., Horticulture.  
E. L. MORRIS, B.S., Entomology.  
W. H. VOLCK, Entomology.  
EMIL GRAUEL, Horticulture.  
H. L. HURST, Dairy Industry.

## THE SHORT COURSES

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An Act of the Legislature of 1905 provided for the purchase of a farm for the University of California, to be known as the University Farm and to be used by the College of Agriculture for purposes of experimentation and instruction in agriculture. In addition to other details the Act provided that "short courses of instruction shall also be arranged for in each of the leading branches of agricultural industry, so regulated as to provide for popular attendance and general instruction in agricultural practice."

Conforming to this Act, and with funds appropriated by each succeeding legislature, short courses have been given annually, beginning in the fall of 1908. The attendance and the expressions of hearty appreciation of the courses have been gratifying to the University and have indicated that the plans adopted are satisfactory to the majority. Because of the extreme specialization in California agriculture, the courses are divided into units corresponding to California practice, and the length of each unit course is fixed at about two weeks. The units are so timed, however, that any person desiring may attend three different courses covering a period of six weeks. Each course is arranged with a full daily schedule and thus there is little opportunity to pursue two courses simultaneously.

For 1912 the courses begin September twenty-third, slightly earlier than in former years, in order that they may be completed prior to general election on November fifth. One exception is the course in dairy manufactures, which continues to November twenty-first.

### SHORT COURSE CALENDAR 1912

General Agriculture, two weeks, September 23rd-October 5th.

First week, irrigation; second week, soils, fertilizers, farm crops, etc.

Dairy Farming, two weeks, October 7th-19th.

First week, testing and handling milk; second week, dairy cattle.

Animal Industry and Veterinary Science, two weeks, October 21st-November 2nd.

First week, beef cattle, sheep and swine; second week, horses and mules.

Horticulture and Viticulture, three weeks, October 14th-November 2nd.

First week, citrus fruits; second week, deciduous fruits; third week, viticulture.

Poultry Husbandry.—Incubating and care of chicks, six weeks, September 23rd-November 2nd, Lectures and demonstrations, two weeks, October 7th-19th.

Dairy Manufactures, seven weeks, October 1st-November 21st.

For creamery buttermakers and cheesemakers.

Home Economics, two weeks, October 21st-November 1st, Sewing and simple dressmaking.

Persons who are able to attend six weeks will find the following possible combinations of consecutive courses:

1. General Agriculture, Dairy Farming and Animal Industry.
2. General Agriculture, Dairy Farming and second and third weeks of Horticulture.
3. General Agriculture, Poultry and Animal Industry.
4. General Agriculture, Poultry and second and third weeks of Horticulture.
5. General Agriculture, Poultry and Home Economics.
6. Persons electing six weeks course in Poultry may take, at the same time, the major portion of General Agriculture and either Home Economics, Animal Industry, or the second and third weeks of Horticulture. The fee for the longer course in Poultry covers all charges for the other courses when taken simultaneously.

#### ADMISSION

There is no entrance examination and no restriction as to sex. Any person eighteen or more years of age and interested in farming is eligible to enrollment.

#### DAILY SCHEDULE

Instruction begins uniformly at eight o'clock and continues to five in the afternoon with the usual intermission of an hour for lunch at noon. Occasional evening lectures are arranged. Each student must first register and pay the fee at the business office when he will be directed to the particular course he is to take.

Registration hours are as follows:

General Agriculture, Monday, September 23rd,

8-12 a.m. Instruction begins 1 p.m.

Home Economics, Monday, October 21st,

8-12 a.m. and 1-2 p.m. Instruction begins 2 p.m.

Horticulture, Monday, October 14th, 8-12 a.m. Instruction begins 1 p.m.

Poultry Husbandry, Six weeks' course, Monday, September 23rd,  
8-12 a.m. Instruction begins 1 p.m., Two weeks' course, Monday,  
October 7th, 8-12 a.m. Instruction begins 1 p.m.

Dairy Manufactures. Tuesday, October 1. 8-12 a.m. and 1-5 p.m.  
Instruction begins October 2, 8 a.m.

Dairy Farming or Animal Industry. Instruction begins 8 a.m. of  
first day. Registration at any office hour prior to that date.

While it is recommended that students register at the hours named and thus be present for the entire course yet they may register at any time. The registration office is open from 8-12 and 1-5 daily, except Saturday afternoon and Sunday.

### EXPENSES

Ample living accommodations are found at Davis in hotels and private families with board and room at about twenty-five dollars per month. Board may be secured at the University Farm dining hall at five dollars per week or twenty dollars per month. It is probable that a few short course students may be provided with rooms in the dormitories. The price is two dollars per week.

A small fee is charged each student to cover cost of materials used in laboratories and demonstrations. In the courses which include milk testing a deposit for breakage is also charged but such portion as is not needed to pay for breakage is returned. The full fee and deposit for each course are to be paid whether the participant is present the whole or only part of the course except in Horticulture and Viticulture, where the minimum fee is \$2, if attendance is two weeks or less. The fees and deposits are as follows:

Animal Industry and Veterinary Science, fee \$2.

Dairy Farming, fee \$2, deposit \$3.

Dairy Manufactures, fee \$10, deposit \$5.

General Agriculture, fee \$2.

Home Economics, fee \$2.

Horticulture, fee \$3.

Poultry Husbandry, fees: two weeks course \$2; six weeks course \$5.

Students in dairy courses are required to wear white muslin suits and caps in the laboratories, and to keep them clean. Each student should provide himself with at least two suits—cost about one dollar each.

In field work or handling livestock the student should wear overalls and jumper.

The cost of text and note books depends largely upon the desire of the individual. Text books are not required in any course except Dairy Manufactures, where the cost does not exceed \$5.

### REDUCED RATES ON ALL RAILROADS

Davis, the home of the University Farm, is on the Southern Pacific railway, thirteen miles west of Sacramento, and within easy access from all points.

Attendants upon the short courses may secure a round trip rate of one and one-third lowest first class fare on the receipt-certificate plan from all stations in California, including Reno, Nevada. Stop-over privileges may be secured on the going trip if the agent at initial point is asked for ticket allowing such privileges and by paying the regular stopover fare. No stopovers are allowed on the return trip. In all cases ask for receipt-certificate when purchasing ticket to Davis.

This must be signed by the clerk at the University Farm before return ticket can be secured at one-third fare. In no case can one-third return fare be obtained if the purchaser fails to obtain receipt-certificate at his home station.

Railroads granting reduced rates for short courses: Southern Pacific, Santa Fe, Western Pacific, Northwestern Pacific, San Pedro, Los Angeles & Salt Lake.

Tickets are on sale going September 13th to November 21st, 1912, and good returning September 23rd to November 26th, 1912.

#### EXCURSION PARTIES TO UNIVERSITY FARM

Especial inducements are granted to any locality where a number of people desire to visit the Farm and possibly spend a week at any one short course. For parties of one hundred or more traveling together on regular trains on going trip from any one point a rate is granted of one limited first-class fare for the round trip, and if the party numbers one hundred twenty-five or more, the same rate is granted with special train service. Tickets sold on this basis will be limited to seven days from date of sale, except that where the one-way first-class limited fare is \$10 or more, the return limit will be fourteen days from date of sale.

The attention of Chambers of Commerce, Farmers' Clubs, Granges and Farmers' Unions is called to this excellent opportunity to acquaint their members with the work of the University Farm.

#### THE STATE FAIR

At Sacramento, thirteen miles from Davis, from September 14th to 21st inclusive, occurs the annual State Fair. It will be the biggest Fair ever held in California. The short courses at Davis begin on September 23rd, immediately following the close of the Fair, and the early date at which round trip tickets are on sale (September 13th) makes it possible for any one to visit the Fair and then go to the short courses on the same railroad ticket. The ticket must be purchased for Davis with stopover at Sacramento.

#### INQUIRIES

All persons desiring further information by correspondence about the short courses should address Leroy Anderson, College of Agriculture, Berkeley, California.

## DESCRIPTION OF SHORT COURSES

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### GENERAL AGRICULTURE

Two weeks—Monday, September 23rd-Saturday, October 5th.

*Irrigation.* Associate Professor ETCHEVERRY and Mr. BECKETT.

Explanation of principles and construction of levels and level rods. Practice with levels and rods. Staking out work, calculating quantities and keeping notes.

Preparation of land for irrigation. Description of tools used in digging laterals and grading land. Different methods of applying water. Measurement of water and computation by means of meters, weirs, floats, etc.

First week, 2 lectures and 6 hours field work daily.

*Grasses and Forage Crops.* Professor WICKSON.

A discussion of the various lands available for pasturage and forage purposes in California; of the policies which yield best results, and the culture of grasses and other forage plants which have shown special adaptation to California conditions under rainfall or irrigation.

Second week, 5 lectures.

*Field Crops.* Associate Professor SHAW and Mr. GAUMNITZ.

The lectures will cover the technique of grain production, the fundamental principles of dry land farming, crop rotation, conservation of soil fertility, seed selection, and the culture of alfalfa.

Second week, 2 hours daily.

*Fertilizers.* Associate Professor BURD.

The nature of fertilizers and their relation to plants and soils.

Second week, 4 lectures.

*Soils.* Assistant Professor LIPMAN.

Lectures, with field and laboratory demonstrations, on the physical, chemical, and bacteriological factors involved in soil fertility. Discussion of soil types and their modifications, movements of soil, air and water, methods of cultivation and fertilization, and the relation of soil bacteria to the plant food supply.

Second week, 4 days, 3 hours daily.

*Farm Machinery.* Mr. KOEBER.

A study of farm implements and machinery. The large variety owned by the Farm and exhibited during the week by manufacturers affords ample illustrative material.

Second week, 2 hours daily.



CLASS IN IRRIGATION



CLASS IN FARM MACHINERY

### DAIRY FARMING

Two weeks—Monday, October 7th-Saturday, October 19th.

**First Week—Handling Milk.**

Professor ANDERSON, Assistant Professor DAVIS, Mr. HAGEMANN and Mr. HURST.

Lectures upon the composition of milk and the necessary requirements for handling and separating milk and cream for market or dairy purposes; testing milk and cream for butterfat and adulteration; yearly tests of dairy herds. Daily practice in testing laboratory, with hand separators, in pasteurizing and cooling milk.

**Second Week—Dairy Cattle.**

Professor MARSHALL, Mr. THOMPSON and Mr. ——.

Lectures upon the various breeds of dairy cattle; their selection, feeding, care and management; economical production of milk and butterfat; raising and handling forage crops; silos and silage; planning dairy buildings and daily practice in judging and selecting dairy cattle.

Veterinary Science, described in Animal Industry Short Course, will begin the second week of this course and treat of dairy cattle.

### ANIMAL INDUSTRY AND VETERINARY SCIENCE

Two weeks—Monday, October 21st-Saturday, November 2nd.

*Animal Industry.*

Professor MARSHALL, Mr. THOMPSON and Mr. ——.

First week—Beef Cattle, Sheep, and Swine. Lectures on market types, breeds, and their handling, including a study of their origin, history, characteristics, and adaptability to different conditions of soil and climate; practice work in judging.

Second week—Horses and Mules. Lectures on the various breeds; their origin and history; feeding, care, and handling, particular attention being given to the market types, with their characteristics and adaptability for different purposes; practice work in judging.

*Veterinary Science.* Dr. HARING, Dr. HAYES, and Special Lecturers.

The prevention of animal diseases, care, and treatment of sick animals, preparation of simple farm medicines, methods of restraint for animals during operations, and practical facts regarding the anatomy and physiology of domestic animals, illustrated by dissections of horses and cattle. A limited number of students will be privileged to perform minor surgical operations, such as dehorning, spaying, castrating, and veterinary dentistry. Special instruction will be given concerning the treatment of hogs with hog cholera serum and vaccine.

**NOTE.**—Persons desiring instruction in dairy cattle should register October 14, the beginning of the second week in Dairy Farming.



CLASSES IN DAIRYING



JUDGING SHORTHORNS

## HORTICULTURE, VITICULTURE AND ENTOMOLOGY

Three weeks—Monday, October 14th-Saturday, November 2nd.

Professor WICKSON, Professor WOODWORTH, Associate Professor BIOLETTI, Associate Professor CLARKE, Associate Professor COIT, Assistant Professor QUAYLE, Mr. FLOSSFEDER, Mr. TAYLOR and Special Lecturers.

Citrus Culture, Monday, October 14th-Saturday, October 19th.

General Horticulture, Monday, October 21st-Saturday, October 26th.

Viticulture, Monday, October 28th-Saturday, November 2nd.

Under each of these subdivisions Entomological problems will be fully discussed. Special attention is drawn to the arrangement of topics permitting, as it does, the busy farmer to take one week of some particular subject, if he so desires, or allowing the student to cover the whole matter very fully in a stay of three weeks.

First week, *Citrus Culture*, October 14th-October 19th.—A course covering the planting and management of Citrus orchards. All phases of this important industry will receive attention by lecture, demonstration and practice. Considerable time will be devoted to cultural methods, including cover crops, irrigation, fertilizers and control of insects and diseases.

Second week, *General Horticulture*, October 21st-October 26th.—A series of lectures and demonstrations covering as fully as the season and material at hand will permit, the matter of deciduous fruit culture in its varied phases.

Third week, *Viticulture*, October 28th-November 2nd.—A course of 23 lectures and demonstrations on grape growing in which special attention will be given to choice of stock, preparation of soil, care of young vines, control of diseases, grafting and pruning, and the handling of the crop.

*Entomology*.—As a portion of the work in each of the sections in Horticulture and Viticulture a series of lectures and demonstrations covering the problems and practice of insect control will be given. The following subjects will be covered: Codling moth, peach moth, potato moth, corn worm, cutworms, grasshoppers, vinehoppers, cabbage aphid, melon aphid, appleleaf aphids, woolly aphids, phylloxera, San Jose scale, red and yellow scale, black scale, brown apricot scale, white fly, fruit thrips, red spiders, etc. Also a detailed discussion of arsenical sprays, distillate emulsions, lime-sulphur mixture and cyanide fumigation.

Excursions to nearby packing houses, orchards, and vineyards will be arranged for Saturdays during this course. Students will thus be enabled to observe methods under the most favorable conditions. Reading-rooms will be available and illustrated lectures covering various phases of orchard work will profitably occupy certain evenings while the course is in progress.



Dining Hall

Dormitories

Pavilion

Dairy  
Building

#### THE UNIVERSITY FARM—EQUIPMENT AND WORK

The Farm—780 acres of first class valley land are planted to a variety of crops, alfalfa, barley, oats, wheat, corn, beets and pasture in addition to experimental plantings named below.

*Animal Industry.*—The buildings are one containing offices, class rooms and library of herd books, and three barns for cattle, horses and sheep. The livestock are Jersey and Holstein dairy cattle; Angus, Hereford and Shorthorn beef cattle; Hampshire, Shropshire and Southdown sheep; Berkshire, Duroc-Jersey, Poland China and Tamworth swine; Clydesdale, Percheron and Shire draft horses.

*Dairy Industry.*—Fully equipped creamery for making butter and cheese, ice-making plant, laboratories and class rooms. About 600 pounds of butter are made daily from pasteurized cream. The main Farm business office is in the Dairy Building, Room 6.

*Cereal Investigations.*—Fifty acres are devoted to these and investigations in growing summer and cover crops. Of wheats this season there are 60 varieties, 20 of them pedigreed, beside 150 hybrids; of barleys, 72 varieties, 12 of them pedigreed; and of oats, 30 varieties, 8 of them pedigreed. The seed house is the laboratory and center for this work.

*Farm Mechanics.*—Fully equipped carpenter and blacksmith shop with twelve double benches and eighteen hand forges. The line of farm machinery includes grain drills, manure spreaders, self binders, hay tedder, and two types of gasoline tractors.

*Horticulture.*—A two-story main building 60x80 feet contains laboratories in horticulture, viticulture, botany, chemistry and soils, class rooms, and library for short course and other students. A work

## ALL EXCEPT POULTRY BUILDINGS



*Culture*      *Shop*      *Water Tower*      *Veterinary and Animal Industry Buildings*      *Sheep Barn*      *Dairy and Horse Barns*

room and greenhouse adjoins the building on the south. Twenty acres are planted to commercial and experimental orchard, containing 15 varieties of almonds, 20 of apples, 9 of apricots, 5 of cherries, 112 of peaches, 8 of pears, 18 of plums, 5 of prunes, and 18 of walnuts.

*Irrigation*.—The Farm is supplied by a ditch from Cache Creek the outlet of Clear Lake and by two or more pumping plants. Under the United States Department of Agriculture investigations are conducted in the irrigation of alfalfa, barley, oats, wheat, corn, potatoes, sugar beets and of orchards and vineyards.

*Poultry*.—This plant shows in use various types of houses, incubators and brooders. A new main building 40x60 feet and a new brooder house 17x75 feet have just been completed. The fowls are all pure bred and consist of ten or more standard varieties.

*Veterinary Science*.—A building 40x80 feet, with an adjoining clinic stable 20x30 feet, contains office, laboratory, operating and demonstration and lecture rooms. A large number of specimens illustrating different animal diseases has been collected and preserved.

*Viticulture*.—The field equipment consists of 10 acres of commercial Muscats and 20 acres of experimental vineyard. In the latter are 270 varieties of vinifera and 60 varieties of table and raisin grapes; 20 varieties of resistant stock are in use. A small, well equipped building affords opportunity for bench grafting, callousing, disinfecting, etc. This is near a nursery of young stock and of phylloxera resistant mother vines.

*Student Life*.—A dining room 36x75 feet, with kitchen adjoining, and two dormitories each 36x150 feet, afford accommodations for one hundred fifty students, beside resident instructors and necessary help.



CLASS IN VITICULTURE



CLASS IN HORTICULTURE

## POULTRY HUSBANDRY

*Incubation and Brooding* (Six weeks, September 23rd-November 2nd.)  
Professor JAFFA, Mr. —, and Special Lecturers.

This course is offered for the benefit of those who wish to study incubation from the beginning, and also the care and feeding of brooder chicks during the most critical period of their lives. Persons electing the six weeks' course will have charge of the incubators from the time of putting in the eggs until hatching and then will care for the chicks for three weeks. They will also have the advantage of the two weeks' course of lectures and demonstrations which is specially arranged for those who cannot attend for a longer time, and which is so planned as to include the third week of incubation and first week of brooding. No lectures or instruction will be given the first two and last two weeks of this course further than is essential to the practical work in hand. Those doing this work are privileged to attend other short courses in so far as their poultry work will permit. Students may do any desired amount of work at the poultry plant.

*Lectures and Practice Work* (Two weeks, October 7th-19th.)  
Professor JAFFA, Mr. —, and Special Lecturers.

1. The Establishment of a Poultry Plant. The consideration of locality, selection of land, method of operation, and economical construction.
2. Breeds and Breeding. The study of different breeds, with special reference to California conditions.
3. Judging. A study of the standards of the different breeds and practical demonstrations and scoring.
4. Incubation and Brooding. The study of the principles involved in the problems presented.
5. Feeding. The scientific principles underlying the use of feeds and their practical application to the age, condition, and purpose for which the fowl is designed. The composition of foods and compounding of rations.
6. General Management. The study of all branches of the routine and special problems that aid in success.
7. Poultry Entomology. Assistant Professor HERMS.
8. Poultry Diseases and Surgery. Dr. HARING and Dr. HAYES.



CLASS IN POULTRY HUSBANDRY



MAIN POULTRY BUILDING

## DAIRY MANUFACTURES

Seven weeks, Tuesday, October 1st-Thursday, November 21st.

Professor ANDERSON, Assistant Professor DAVIS, Mr. HAGEMANN, Mr. ——, Mr. HURST and others.

This course affords as much practical instruction in the nature and qualities of milk and cream and the manufacture of butter and cheese as the time will permit.

Lectures on the secretion, composition, and handling of milk; Babcock test for butterfat in milk, cream, and other dairy products; use of the lactometer; acid tests; separation, pasteurization, and ripening of cream; preparation and use of starters; churning, and moisture control in butter; moisture and salt tests in butter; overrun; dairy bacteriology; various phases in the making of the California and Cheddar types of cheese; scoring of butter and cheese; creamery accounting; creamery management; steam engines, boilers, motors, pumps, refrigeration. Lectures upon the breeding, care, and improvement of dairy cattle, and practice in judging.



PASTEURIZING AND RIPENING CREAM



CREAMERY WORK—TESTING LABORATORY



CREAMERY WORK—CHURNING

Two lectures daily for seven weeks. Practice in separating room, churning room, cheese rooms, engine room, milk testing laboratory, bacteriology laboratory, judging, etc.; 4-6 hours daily, including Saturday.

During this course the sixth and last entry for the current year of the Educational Butter Scoring Contest will be scored at the dairy school for the benefit of students. This affords an opportunity to examine butter from all parts of the state. At this time a students' judging contest will be held.

It is recommended that those registering in this course shall have had some creamery or dairy experience. While we do not guarantee positions to the students in this course, the demand for men with training in these subjects is so great that all worthy students have thus far found good positions.

#### HOME ECONOMICS

Two weeks, October 21st-November 1st.

Instructor, Miss HARRIET HOWELL, formerly Instructor in Domestic Art. California Polytechnic School, San Luis Obispo.

This course will be chiefly practical work by each student and will deal with the fundamental principles of hand and machine sewing and pattern making as applied to simple dresses. Students should bring suitable material for a shirt waist or unlined dress with pattern for same, and sewing materials.

## SHORT COURSE STUDENTS, 1911

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### ANIMAL INDUSTRY

Name	Address	Name	Address
Angwin, Lawrence, Berkeley.		Miller, F., Alameda.	
Beal, Archer L., San Francisco.		Rebmann, Jeremiah, Petaluma.	
Biehl, William F., San Francisco.		Robinson, William H., Lompoc.	
Bowman, William J., San Francisco.		Schaefer, Walter, Napa.	
Dewing, L. Stephen V., Walnut Creek.		Schowalter, P. F., Upland.	
Forrest, Richard A., Occidental.		Scott, Samuel F., Alameda.	
Jenkins, Claude, Martinez.		Smith, W. Carleton, Martell.	
Merrill, W. L., Colusa.		Stafford, Chas. E., San Diego.	
Neil, Harry Nash, Exeter.		Taylor, Horace R., Alameda.	
Padilla, Gregory, San Francisco.		Worden, L. P., Yuba City.	
Peterson, J. H., Dixon.			

Total, 21

### DAIRY FARMING

Name	Address	Name	Address
Alderman, Wallace J., Grass Valley.		Loeke, C. C., Lockeford.	
Alexander, James, Modesto.		Rockwood, Alfred L., Pacific Grove.	
Atwood, Eldon C., Ethanae.		Schowalter, Paul F., Upland.	
Blathwayt, Frank W., Redding.		Smith, W. Carleton, Martell.	
Blewett, Evans, Bethany.		Stafford, Charles E., San Diego.	
Bowman, William J., San Francisco.		Stevens, Charles C., Turlock.	
Chapman, George M., Winters.		Tennant, Maye L., Coreoran.	
Davison, John M., Arlington Station, Riverside.		Wallace, Andrew, Sacramento.	
Dempster, Milen Ross, Berkeley.		Walline, Harold, Upland.	
Dewing, L. Stephen V., Walnut Creek.		Walline, Roland, Upland.	
Fay, Clarence E., Visalia.		Watson, Max., San Diego.	
Goatley, George A., Petaluma.		Westfall, Roger, Sycamore.	
Hunt, Homer H., San Fernando.		Wittig, Edward C., Berkeley.	
		Worden, L. P., Yuba City.	

Total, 27

### DAIRY MANUFACTURES

Name	Address	Name	Address
Allen, Sheldon A., Berkeley.		Kaehler, Bruno, Banta.	
Altona, Karl Georg, San Francisco.		McNeely, Clarence, Sacramento.	
Baciarini, Victor, Suisun.		Norburg, Oscar J., Bishop.	
Berktold, Anton, Eureka.		Paulsen, William, Fresno.	
Bacon, Julian Smith, Suisun.		Perry, Joe Davis, Gustine.	
Dickson, Wiley W., Fairoaks.		Petersen, Peter, Davis.	
Christiansen, Laurids, Salinas.		Rebmann, Jeremiah, Petaluma.	
Fish, Theron, Davis.		Rousseau, Alex., San Rafael.	
Fitch, Ernest D., Manchester.		Seagren, Arthur E., Campbell.	
Gjerloff, Anton, Fresno.		Smith, Gilbert C., Oakland.	
Gurney, Leo Benjamin, Davis.		Thysen, Mark, Watsonville.	
Hixson, Frank H., Crow's Landing.		Wadsworth, William J., Oakland.	
Holzhauser, Ludwig, Etna Mills.			

Total, 25

## GENERAL AGRICULTURE

Name	Address	Name	Address
Beal, Archer L., San Francisco.		Merrill, W. L., Colusa.	
Biehl, William F., San Francisco.		Morrison, Walter H., Davis.	
Blewett, Evans, Bethany.		Nesbit, Samuel A., Concord.	
Bowman, Wm. J., San Francisco.		Noyes, Russell, San Francisco.	
Brauer, Lloyd J., Millville.		Owen, William E., Bruceville.	
Cock, Henry A., East Oakland.		Padilla, Gregory, San Francisco.	
Crill, Howard, Willows.		Sexauer, H. F., Berkeley.	
Davison, John M., Arlington.		Schowalter, P. F., Upland.	
Dempster, Milen Ross, Berkeley.		Shirai, James J., San Francisco.	
Dewing, James A., Walnut Creek.		Silver, Elmer G., Elk Creek.	
Fake, Frank O., Oakland.		Smith, W. Carleton, Martell.	
Fay, Clarence E., Visalia.		Stafford, Charles E., San Diego.	
Glaser, Henry, San Francisco.		Wallace, Andrew M., Sacramento.	
Gronner, Sigmund O., Lathrop.		Weber, Ray P., Cupertino.	
Goss, P. B., Burlingame.		Westfall, Roger, Sycamore.	
Hunt, Homer H., San Fernando.		Whitecomb, Falston, Berkeley.	
Hurt, Frank, Santa Rosa.		Wittig, Edward C., Berkeley.	
Kass, Nicholas M., Lincoln.		Worden, L. P., Yuba City.	
Lord, J. D., Sacramento.		Zabala, Albert J., Salinas.	
Martin, A. A., Sacramento.			

Total, 39

## HORTICULTURE AND VITICULTURE

Allen, W. S., Lockeford.	Hurt, Frank, Santa Rosa.
Ameniabar, Alfred, Santiago, Chili.	Huxley, Albert J., Watsonville.
Anderson, Samuel J., Richgrove.	Jessen, Walter H., San Francisco.
Bishop, Roswell F., Hollister.	Kass, Nicholas, Lincoln.
Blewett, Evans, Bethany.	Koller, John M., San Jose.
Brauer, Lloyd J., Millville.	Lyons, Mrs. Anderson, Bloomsburg.
Brown, David C., Los Angeles.	Lyons, Miss Ella, Bloomsburg.
Collins, Charles F., Dinuba.	Miller, Hans.
Crill, Howard, Willows.	Morrison, Walter H., Davis.
Cunningham, Emmett F., Le Grand.	Norton, Daniel F., Grass Valley.
Dawson, Chas. B., Modesto.	Pond, Lewis, Mountain View.
Decarli, John, Stockton.	Porter, Robert, Santa Clara.
Dehay, Wendell P., Cloverdale.	Proctor, Ashley F., San Leandro.
Dempster, Milen Ross, Berkeley.	Rockwood, Alfred L., Pacific Grove.
Ditto, Ervin, Elm Hall, Michigan.	Schlueter, Albert, Kerman.
Egbert, Warren, Santa Rosa.	Schultz, Norman P., Delano..
Fay, Clarence E., Visalia.	Scott, Wallace A., San Francisco.
Foster, Albert Miner, Berkeley.	Sexauer, H. F., Berkeley.
Foster, Frank L., San Jose.	Sheppard, Cyrus, Kerman.
Gilliam, Frank, Princeton.	Shirai, James J., San Francisco.
Glaser, Henry, San Francisco.	Stetson, Guy T., Nordhoff.
Goodwin, Alfred, Ripon.	Van Orden, Richard P., Mountain View.
Goseling, Frank, Sacramento.	Walline, Harold, Upland.
Gregory, Norman C., Gridley.	Walline, Roland, Upland.
Griswold, Charles L., Oakland.	Wittenmyer, Miss Ilene M., Martinez.
Hunt, Homer H., San Fernando.	Wittig, Edward C., Berkeley.

Total, 52

## POULTRY HUSBANDRY

## Six Weeks' Course

Name	Address	Name	Address
Dettmer, Walter T., San Francisco.		Hurt, Mrs. Frank, Forestville.	
Emig, N., Santa Ana.		Jessen, Walter H., San Francisco.	
Fish, Lucia H., Oakland.		Lyons, Mrs. Anderson, Blacksburg.	
Greene, Mrs. Fred E., Clarksburg.		Meikle, James, San Francisco.	
Griswold, Charles L., Oakland.		Taylor, Wm. Herbert, Vallejo.	
Hoockel, Fred, Sacramento.		White, Irving M., Oakland.	

## Two Weeks' Course

Anderson, S. A., Jr., Richgrove.	Hollis, Miss Lucy E., Kirkwood.
Anderson, Mrs. S. A., Richgrove.	Hurt, Frank, Santa Rosa.
Angwin, Lawrence, Berkeley.	McCraith, George, Alameda.
Barrows, Miss Charlotte C., Berkeley.	Meyer, John H., Modesto.
Crill, Howard, Willows.	Padilla, Gregory, San Francisco.
Crill, Mrs. Howard, Willows.	Purser, Edward T., San Francisco.
Davison, Mrs. J. M., Riverside.	Roddan, Donald E., Watsonville.
Glaser, Henry, San Francisco.	Scott, Wallace A., San Francisco.
Goethe, Cluness S., St. Helena.	Shirai, James J., San Francisco.

Total, 30

## HOME ECONOMICS

Name	Address	Name	Address
Allen, Mrs. W. W., Alpaugh.	Lyons, Miss Ella, Davis.		
Cleghorn, Mrs. A. M., Davis.	Montgomery, Miss Mable, Davis.		
Fizell, Mrs. Kate, Davis.	Oeste, Miss Amy B., Davis.		
Gaumnitz, Mrs. A. J., Davis.	Plant, Miss Lois M., Davis.		
Griswold, Mrs. C. L., Oakland.	Ross, Mrs. A. T., Davis.		
Hansen, Mrs. H. J., Davis.	Schneiser, Miss Louise C., Davis.		
Haussler, Mrs. A. F., Davis.	Schmeiser, Miss Elmire F., Davis.		
Haussler, Mrs. M. E., Davis.	Scheffer, Miss Hattie, Davis.		
Kleespie, Mrs. J. R., Davis.	Sikes, Miss Clara B., Davis.		
Lyons, Miss Virgie, Davis.	Smith, Mrs. F. P., Davis.		

Total, 20

Total enrollment .....	214
Deduct for registrations in more than one course .....	51
Total individuals in attendance .....	163

### WORK OF THE COLLEGE OF AGRICULTURE

**The Four-Year Course in Agriculture.** This course is of equal academic rank with other courses in the University. It offers a thorough training in agricultural and allied subjects. The equivalent of four years' training in a high school is necessary for admission. Address Dean, College of Agriculture, Berkeley, California.

**The University Farm School.** A three-year course in agriculture for young men at least sixteen years of age and who have completed the eighth grade of the grammar schools. Mature students may be permitted to take up special lines of work which they are fitted to pursue. Given at the University Farm. For full information address Principal of the Farm School, Davis, California.

**Farmers' Short Courses.** These are given in the fall of each year at the University Farm. They are short and compact, each course dealing with a single phase of agriculture, so that busy men who wish to attend them will not be away from their business for more than a brief time. The short courses are open to all persons at least eighteen years of age and no educational qualification is imposed. Address Dean, College of Agriculture, Berkeley, California.

The Agricultural Experiment Station conducts investigations in all lines of agriculture. It issues bulletins on agricultural subjects which are sent free to residents of California. Such residents may have their names placed upon the permanent mailing list if they so request. The Central Station is located at Berkeley and in addition there are the following stations:

- The University Farm at Davis.
- The Kearney Farm at Fresno.
- The Plant Disease Laboratory at Whittier.
- The Citrus Experiment Station at Riverside.
- The Imperial Valley Station at Meloland.
- The Forestry Stations at Chico and Santa Monica.

Address Director, Agricultural Experiment Station, Berkeley, California.

Agricultural Extension work is carried on by means of correspondence, addresses by staff members, farmers' institutes and by the agricultural demonstration train, which during 1911-12 covered about 4,000 miles and was visited by over 100,000 people. Address Superintendent, Agricultural Extension, Berkeley, California.

Agricultural Extension also includes assistance to elementary and high schools to introduce agriculture into their courses of study. Garden contests are supervised and 125 clubs containing 6,000 members have been organized in elementary schools. Address Agricultural Education Division, Berkeley, California.

